

In the Claims

Please cancel claims 1-46 without prejudice to their presentation in another application.

Please add new claims 47-58 as indicated below.

--47. A system of associated devices for preparing oligonucleotide compounds targeted to a nucleic acid and identifying specific members of said oligonucleotide compounds that possess at least one property, said system comprising:

a first device preparing a virtual library of oligonucleotide compounds in computer manipulable form from a selected target nucleic acid sequence;

a second device comprising an automated synthesizer accepting said computer manipulable form and preparing a corresponding set of real oligonucleotide compounds; and

a third device accepting said set of real oligonucleotide compounds and performing at least one assay for each of said real oligonucleotide compounds wherein said assay identifies the specific members of said set possessing said at least one property.

48. The system of claim 47 wherein the steps of preparing a virtual library, preparing a real library and performing at least one assay are performed robotically.

49. The system of claim 48 wherein said step of robotically performing at least one assay is performed by computer-controlled real-time polymerase chain reaction or by computer-controlled enzyme-linked immunosorbent assay.

50. The system of claim 47 wherein each of said at least one property is a physical, chemical or biological property.

51. The system of claim 50 wherein said biological property is the ability to modulate a target nucleic acid sequence.

52. The system of claim 47 wherein at least one device reduces the members of said virtual library by eliminating members based on a set criteria.

53. The system of claim 47 wherein at least one device reduces the members of said virtual library by a process of selection based on a uniform distribution of oligonucleotide compounds across the selected nucleic acid target.

54. The system of claim 47 wherein at least one device applies selected chemical modifications to said virtual oligonucleotide compounds to give chemically modified virtual oligonucleotide compounds in computer manipulable form.

55. The system of claim 54 wherein selected chemical modifications are applied to each of said virtual oligonucleotide compounds electronically.

56. The system of claim 47 wherein said target nucleic acid sequence is that of a genomic DNA, a cDNA, a product of a polymerase chain reaction, an expressed sequence tag, an mRNA or a structural RNA.

57. The system of claim 47 wherein said target nucleic acid sequence is a human nucleic acid sequence.

58. The system of claim 47 further including a fourth device assaying at least one biological property of said oligonucleotide compounds, wherein said third device assays at least one physical or chemical property.

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